CLAIMS

1. An apparatus comprising:

a phase lock loop (PLL) configured to multiply an input frequency to generate an output frequency in response to a lock signal; and

a lock circuit configured to generate said lock signal, wherein said PLL is configured to select a reference frequency as (i) said input frequency when in a first mode and (ii) a divided frequency of said input frequency when in a second mode.

2. The apparatus according to claim 1, wherein said first mode is further configured to increase a feedback divide ratio.

3. The apparatus according to claim 2, wherein said second mode is further configured to decrease said feedback divide ratio.

4. The apparatus according to claim 1, wherein said lock circuit comprises a lock decision logic circuit.

5. The apparatus according to claim 1, wherein said lock circuit comprises a timer circuit.

6. The apparatus according to claim 1, wherein said lock circuit is configured in response to an internal/external signal.

7. The apparatus according to claim 1, wherein said lock is controlled by a timer.

8. The apparatus according to claim 1, wherein said lock is externally controlled by a user.

9. The apparatus according to claim 1, wherein said PLL comprises:

a first switchable divider configured to generate a reference frequency in response to said input frequency;

a PLL logic circuit configured to generate said output frequency in response to said reference frequency and a feedback frequency; and

a second switchable divider configured to generate said feedback frequency in response to said output frequency.

10. The apparatus according to claim 9, wherein said first and second switchable dividers are further configured in response to said lock signal.

11. The apparatus according to claim 10, wherein:

said first switchable divider comprises a first divider and a first multiplexer, wherein said first multiplexer is configured to select a first divided output frequency or said input frequency and present said reference frequency; and

said second switchable divider comprises a second divider, a third divider and a second multiplexer, wherein said multiplexer is configured to select a second divided output frequency or a third divided frequency and present said feedback frequency.

12. The apparatus according to claim 11, wherein said second and third dividers are configured in series.

13. The apparatus according to claim 11, wherein said second and third dividers are configured in parallel.

14. The apparatus according to claim 11, wherein said second and third dividers comprise multi-channel dividers.

15. An apparatus comprising:

means for multiplying an input frequency in response to a lock signal;

means for generating an output frequency in response to said input frequency;

means for generating said lock signal;

means for selecting said input frequency to be a reference frequency when in a first mode and a divided frequency of said input frequency when in a second mode.

16. A method for frequency and/or phase acquisition in a phase lock loop (PLL), comprising the steps of:

(A) multiplying an input frequency in response to a lock signal;

(B) generating said lock signal by selecting said input frequency to be (i) a reference frequency when in a first mode and (ii) a divided frequency of said input frequency when in a second mode.

17. The method according to claim 16, wherein step (A) further comprises:

increasing a feedback divide ratio when in said first mode; and

decreasing said feedback divide ratio when in said second mode.

18. The method according to claim 16, wherein step (B) is further configured in response to an internal/external signal.

19. The method according to claim 16, wherein step (A) further comprises:

generating a reference frequency in response to said input frequency;

generating an output frequency in response to said reference frequency and a feedback frequency; and

generating said feedback frequency in response to said output frequency.

20. The method according to claim 16, wherein step (A) further comprises:

selecting a first divided output frequency or said input frequency and presenting said reference frequency; and

selecting a second divided output frequency or a third divided frequency and presenting said feedback frequency.